ANTIMICROBIAL ACTIVITIES OF ETHANOL EXTRACT FROM LEAF OF Plectranthus amboinicus

NOR AAINAA ATHIRRAH BINTI MOHD

BACHELOR OF SCIENCE (Hons.) BIOLOGY
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA

JANUARY 2016

This Final Year Project Report entitled "**Antimicrobial Activities of Ethanol Extract from Leaf of *Plectranthus amboinicus*"** was submitted by Nor Aainaa Athirrah binti Mohd, in partial fulfillment of the requirement for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Science and was approved by

En. Mohd Syahril bin Mohd Zan
Supervisor
Faculty of Applied Science
Universiti Teknologi MARA
Pekan Parit Tinggi
72000 Kuala Pilah
Negeri Sembilan

Ilyanie binti Haji Yaacob
Project Coordinator
Faculty of Applied Sciences
Universiti Teknologi MARA
Pekan Parit Tinggi
72000 Kuala Pilah
Negeri Sembilan

Dr. Nor'aishah Abu Shah
Head of School of Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
Pekan Parit Tinggi
72000 Kuala Pilah
Negeri Sembilan

TABLE OF CONTENTS

ABSTRACT

ANTIMICROBIAL ACTIVITIES OF ETHANOL EXTRACT FROM LEAF OF *Plectranthus amboinicus*

Plectranthus amboinicus are belongs to the family Lamiaceae, or bestly known as motherland plant in English. It may be an extensive youthful herb, with exceedingly scented, branched, possessing short delicate erect hairs for dissimilar inhaling abandons. The compound that are found in any part of the plant *Plectranthus amboinicus* from extraction proces is beneficial and can be used as antibiotic to fight against pathogens. The broad use and misuse of antibiotics led to the rise of drugs that are opposed to bacterial and fungal. So it is fundamental to find on alternate to antibiotics. Study was conducted to investigate the antimicrobial potential of ethanol extract of leaf of *Plectranthus amboinicus* against selected bacteria and to compare the two antimicrobial assay by using disc diffusion method and minimum inhibitory concentration method. The study of medicinal properties crude extract prepared using solvent such as ethanol were subjected to antimicrobial activity using Kirby-Bauer disk diffusion method. The verification for minimum inhibitory concentration (MIC) was verify using dilution method against various clinical pathogens like *Escherichia coli, Salmonella typhimurium, Bacillus subtilis* and *Staphylococcus aureus.* After 24 hours incubation, the zone of inhibition was measured and compared with standard antibiotics gentamycin (10µg/disc). Mostly at concentration 100 mg/ml the extract found to be more effective against Gram-positive bacteria compared to Gram-negative bacteria. *Escherichia coli* found to be least susceptible with 7mm diameter at concentration 100 mg/ml. Wherease, *Bacillus subtilis* found to be the most susceptible bacterium with 13.2mm diamter at concentration 100mg/ml towards the ethanol extract. The minimum inhibitory concentration (MIC) of. *B.subtilis* recorded were 0.20mg/ml, *E.coli* were *6.25 mg/ml, S.typhi* were 3.13 mg/ml and *S.aureus* were 1.56mg/ml. The results showed that the plant has significant differeces ($p \leq 0.05$) at concentration 100mg/ml. From the data clearly shows that the ethanol extract of *Plectranthus amboinicus* has the ability to possess powerful inhibitory towards all the pathogenic microorganisms. Increase the concentration is best recommended for upcoming studies of antimicrobial activity of the plant *Plectranthus ambonicus*.